THE GARDEN CALENDAR

A radio discussion by W. R. Beattie, Bureau of Plant Industry, delivered in the Department of Agriculture period of the National Farm and Home Hour, broadcast over the NBC radio network, Monday, May 24, 1937.

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Hello folks: We have been having what the old gardeners call a "backward spring" here around Washington but last Saturday the weather suddenly became warm and for the past three days it has been warm with frequent showers. Those of you who have had experience know what that means in our gardens for the warmth and moisture has started the weeds growing at a terrific rate. Now I am not going to tell you of any magic way to control those weeds for I have found no better method than by the use of the hoe and cultivator. I do know from experience that the secret in controlling weeds is to avoid letting them get the start of you.

The good gardener always keeps the weeds out of his garden but, very few gardeners bother about the weeds that grow along the fence rows or on the uncultivated land outside of the garden. It is these uncontroled weeds that cause us a lot of trouble. First they ripen seeds that blow or are washed onto our cultivated land and so increase our weed control problem. But the second and most important point is that they harbor insects and diseases that attack our cultivated crops. If the trouble ended there it might not be so bad but unfortunately that is just the starting point. Our pathologists and other scientists have found that many of our common weeds that grow outside of our cultivated fields and gardens serve as host plants for certain very destructive virus diseases. These diseases are carried from the weeds to the cultivated crops by insects.

A good example is the mosaic disease that attacks celery in Florida and elsewhere in the South. About ten years ago the celery mosaic disease began to cause serious losses in the Florida celery districts. Mr. F. L. Wellman of our Horticultural Division was assigned to the job of running down the cause and finding a remedy. The mosaic disease had appeared in the Florida celery fields as early as 1924 but like everything else it had to become really bad before anything was done about it. Plants affected with the mosaic first appear stunted and yellowed with irregular leaf markings of yellow color. Later the stalks turn brown and have a water-soaked appearance.

At first it was thought that the disease-producing virus might remain in the soil from season to season. This was soon disproved also that the dried parts of affected plants or the dried juices of these plants would not transmit the disease to healthy plants. Greenhouse and field experiments soon revealed the fact that the common aphid, which is a sucking insect and works mostly on the under sides of the leaves was the guilty party and carried the virus from diseased to healthy plants. These aphids also carried the virus from certain weeds to the celery, from one celery plant to another and back to the weeds again.

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In the case of the southern celery mosaic it was found that the three most important weed plants that served as hosts for the aphids and the mosaic were the Carolina Cranesbill, the wild Wandering Jew, southern pokeweed and the common petunia which is often found growing wild in the neighborhood of the celery fields. The Physalis or husk tomato, the southern pokeweed and the common ragweed were also found to be hosts for the mosaic disease. Marigold, larkspur, periwinkle, snapdragon and zinnia were also found to serve as host plants. Certain vegetables in addition to celery are affected by the mosaic disease, especially peppers, cucumbers, sweet corn, cucumber and squashes. It was found that most of the difficulty came from the wild wandering jew and southern pokeweed although other weeds and a number of cultivated crops are frequently infected from these crops.

At present the celery growers are employing methods of eradication of the weeds in the neighborhood of the celery fields while our scientists are testing all known varieties of celery to see if they can find a strain that is immune to the mosaic disease. This relationship between the weeds, the aphids and the celery mosaic is a good example of what the vegetable grower is up against in the production of his crops. It all resolves itself to the problem of sanitation and breaking up the chain through which the disease is carried over from one year to the next, but without the results of the investigations on the part of men like Mr. Wellman the growers would simply be fumbling blindly in the dark.

It should be noted that the State college and experiment station workers cooperate in these investigations and that they have the benefit of all results obtained. This information is given to the county agents and is available to the growers.

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